

Grade 4 Mathematics

Data Analysis, Probability, and Discrete Mathematics:

Lesson 2

Read aloud to the students the material that is printed in **boldface type** inside the boxes. Information in regular type inside the boxes and all information outside the boxes should **not** be read to students. Possible student responses are included in parentheses after the questions.

NOTE: The directions read to students may depend on the available materials. Read only those parts of the lesson that apply to the materials you are using.

Any directions that ask you to do something, such as to turn to a page or to hand out materials to students will have an arrow symbol (\Rightarrow) by them.

Purpose of Lesson 2:

- In this lesson, the tutor and the students will
 - ✓ match a data set to a graph and vice versa, and
 - ✓ match a graph to a described situation.

Equipment/Materials Needed:

- Copies of Student Sheets 60 – 62
- Crayons
- Paper and pencils

Preparations before beginning Lesson 2:

- Run off 1 copy of Student Sheets 60 – 62 for each student.
- Gather crayons. One crayon per student will do, but you may want to have more.
- Have paper and pencils available.

Lesson 2: Data Analysis

⇒ Give Student Sheet 60 to the students.

Say:

The chart at the top of the sheet shows the favorite colors of the students in Mr. Smith’s class. We are going to make a bar graph from the information. What should we title the graph? (Favorite Colors) Write the title in the box above the graph.

Where should we write the names of the colors? (at the bottom on the dotted lines) Write the names of the colors on the dotted lines. What should we put in the box below the names of the colors? (the word “colors.”)

What should go in the spaces on the left side of the graph? (the number of students) What number should we start with? (0) How high should the numbers go? (9 or 10) How should we label the numbers? (Number of Students) Where should we put the label? (in the box on the left side)

Color or shade in each color. I want each of you to make up two questions that could be answered by the graph. Write your questions. (Samples: Which color was chosen most often? (orange) How many children voted? (28 students) How many more students liked orange over red? (7 students) Have one student read a question. Ask the others to answer the question. Continue until each student has asked at least one question.

⇒ Give Student Sheet 61 to the students.

Say:

The chart at the top shows the favorite lunches of a group of students. Below that there are 4 graphs. Look carefully at each graph. Allow time for the students to look at the 4 graphs. Which graph do you think matches the facts in the table? (C) Why? What is wrong with the others? (Allow students time to look at the graphs and then discuss them.) On graph A, hot dogs had 50 votes. It should have been 55 votes. On B, the scale is wrong. On D, Tacos had 20 votes. It should have been 25. NOTE: It is critical that the students discuss their thinking on these problems.

⇒ Give Student Sheet 62 to the students.

Say:

The graph at the top of the page shows the number of computers in schools in a district. Below the graph, there are 4 charts. Look carefully at the graph and the 4 charts.

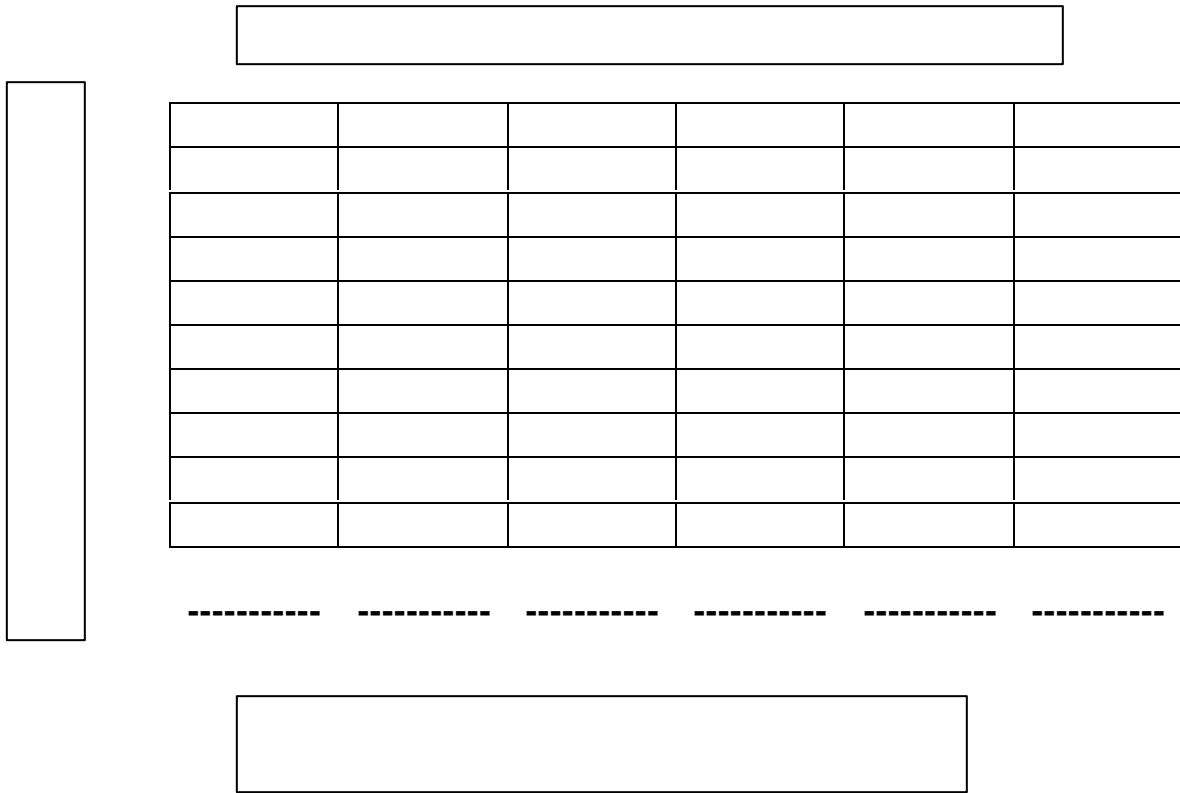
Allow time for the students to look at them. **Which chart do you think matches the facts in the graph? (4) Why? What is wrong with the others?** In chart 1, the person didn't see that each picture stands for 10 computers. In chart 2, school B should have 60 computers. In chart 3, they counted by 2's, not by tens.

Have one student summarize today's lesson.

Student Sheet 60 (Data: Lesson 2)

Favorite Colors of Students	
Colors	Number of Students
Orange	8
Purple	3
Yellow	7
Blue	4
Green	5
Red	1

Bar Graph

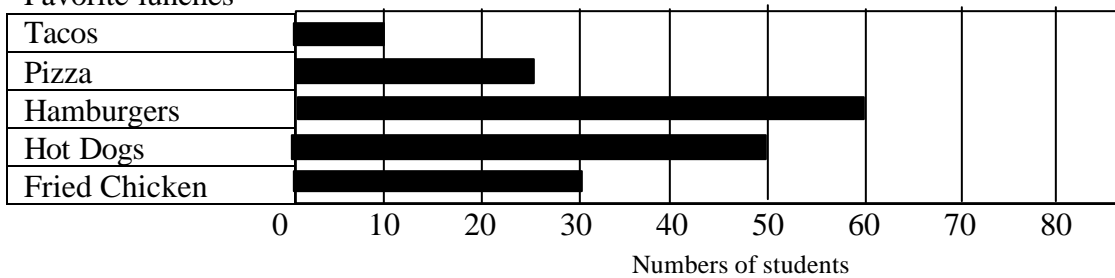


Student Sheet 61 (Data: Lesson 2)

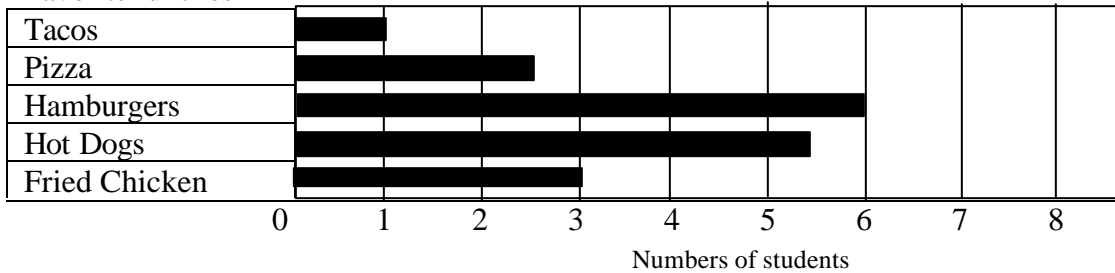
Favorite Lunches	Number of Students
Tacos	10
Pizza	25
Hamburgers	60
Hot Dogs	55
Fried Chicken	30

Students at Reed Elementary School conducted a survey of the foods that most students like for lunch. The chart shows the results. Which graph matches the facts in the chart?

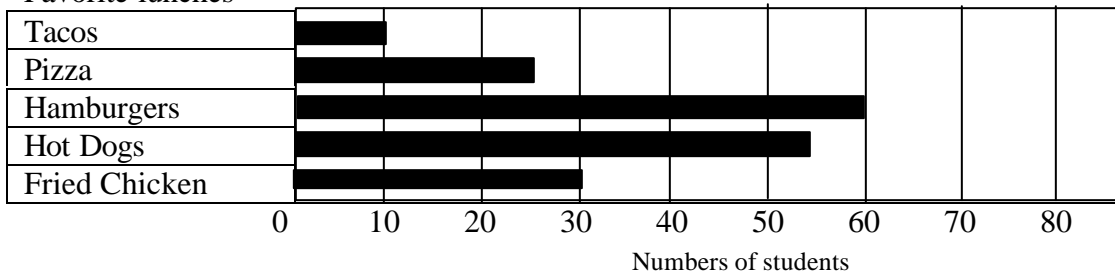
A. Favorite lunches



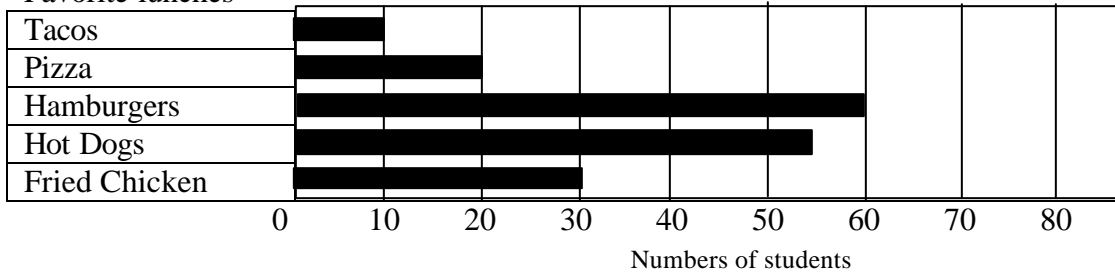
B. Favorite lunches



C. Favorite lunches








D. Favorite lunches



Student Sheet 62 (Data: Lesson 2)

The graph below shows the number of computers at the schools in a district.

Number of computers in schools	
School A	
School B	
School C	
School D	
Each  stands for 10 computers.	

Which chart below matches the graph?

1.

School	Number of computers
School A	4
School B	6
School C	3
School D	7

2.

School	Number of computers
School A	40
School B	50
School C	30
School D	70

3.

School	Number of computers
School A	8
School B	12
School C	6
School D	14

4.

School	Number of computers
School A	40
School B	60
School C	30
School D	70